

The Pileup

Newsletter of the CDXA

Were you at the Hamfest??

It is Sunday evening following the Hamfest as I sit here at my keyboard, somewhat tired but desirous of passing along the rather satisfied feeling I get after the Charlotte Hamfest. No, I don't have a new piece of gear to caress, although I did make some decisions for a future purchase, and my swap meet finds weren't fully satisfied. In fact, I found too little time for just "lookin' around" in a leisurely fashion. Why? There was so much to do. First, there's the renewal of old acquaintances who drop by the CDXA booth. Then there are some great forums to attend—Riley Hollingsworth on FCC enforcement activities, Dave Anderson on the Chatham Island DXpedition, Don Daso on Homeland Security matters, Doug Smith giving us the design lowdown on the soon to be available Ten-Tec Orion, and Wayne Mills from the ARRL Membership Office telling us the Logbook of the World is really here. More on those later.

After the last forum on Saturday, I headed home to pick up the XYL, then back to Red Rocks Bar, Bakery and Grill for a wonderful evening with both

W4VHF	Ted Goldthorpe	President
N4PQX	Bob Burton	Vice-Pres.
K4SQR	Jim Miller	Sec.-Treas.
K4MD	Joe Simpkins	Cluster Mgr.
W3GQ	Paul Sturpe	Assoc. Cluster Mgr.
WB4BXW	Wayne Setzer	Webmaster
K8YC	John Scott	Editor

CDXA and out of town visitors. I think most agreed that we've found a "keeper" in Red Rocks as a venue for dining events. The service was quick and very attentive. The food was very good. The line at the front door awaiting "walk up" seating was a clue that locals also approve highly of Red Rocks. Perhaps, best of all, we've now had a gang of DXers come over from Knoxville, Tennessee the past two years who joined us for dinner. It's great that we can share the fellowship with DXers from another city and that we can offer them some Carolina hospitality for their evening in Charlotte.

So what of the Forums? Here's a rundown of the ones I attended.

Riley Hollingsworth, FCC. Riley had a large gathering of interested amateur radio operators—one of the larger forums I've attended at the Hamfest in the past 5 years. I took two main messages away from Riley's presentation. The first is that of all the services under the auspices of the FCC, Amateur Radio is one which has clearly shown a desire for regulation. That makes Riley's job easier, rather than harder. Some commercial

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CDXA PacketCluster & Other Communication Systems		
W4DXA (11 mi. NNE of Mooresville)	144.93 MHz (1200 bits/second)	441.00 MHz (9600 bits/second)
K4MD Charlotte, NC	144.91 MHz (1200 bits/second)	441.075 MHz (9600 bits/second)
Digipeater near Wingate, NC	144.91 MHz (DXWIN)	
CDXA Repeater 147.18 MHz (+600)	W4DXA, Near Fort Mill, SC	
World Wide Web Homepage	www.cdxa.org	
Wednesday Luncheon (11:30 AM)	Shoney's, 355 Woodlawn Road, Charlotte, NC (704-525-4395)	

Beam Heading Charts

At the Charlotte Hamfest, the CDXA offered a free handout printed on heavy card stock showing the beam headings to all 335 DXCC entities. One side of the chart is sorted by Entity Name and the other side is sorted by Entity Prefix. The beam headings are based on an antenna situated at Charlotte, North Carolina.

Your editor got to thinking how great it would be to prepare the same chart with the computations needed to make it general for any location as long as you defined the locale from which you desired beam headings. Certainly this would be desirable for those of you who live well away from the Charlotte area.

Well, I found that someone beat me to the punch. On the CT website (www.k1ea.com) under the "CT Utilities" section, I found a generic beam heading program which allows you to put in the latitude and longitude of your QTH and it will produce the beam headings for all 335 entities sorted in the same manner as the CDXA's printed chart. It even gives you options to modify the printing format somewhat. Want the free software? Go to:

<http://www.qsl.net/k3rl>

and download this freeware. The software makes use of the CTY.DAT file used by CT. This file and the related software are included in a zip file available from the above site. If you'd like the printed chart we prepared for the Charlotte Hamfest, let me know at k8yc@adelphia.net.

The Pileup

Official Newsletter of the Carolina DX Association
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Published monthly 10 times per year, excluding the months of June and December.

The purpose of the association is to secure for the members the pleasures and benefits of the association of persons having a common interest in Amateur Radio.

Members of the CDXA shall adhere to "The Amateur's Code" as published from time to time in *The ARRL Handbook for Radio Amateurs*, and shall consist of those valid licensed amateur operators having an interest in promoting amateur radio. Long distance communications (DX) is of special interest to members of the association, but said interest is not a requirement of membership.

Dues are \$30 per year for those using the PacketCluster maintained by the Association, \$15 otherwise, payable each January. Dues are payable by check to the Secretary/Treasurer:

Jim Miller, K4SQR
11600 Hilda Court
Charlotte, NC 28226

ARRL DXCC Challenge "Heats Up"

The ARRL's DXCC Challenge Award is starting to gain attention. Highly ranked members of CDXA in the Challenge are Jack Jackson (N4JJ-21), John Kanode (N4MM-23), Gary Dixon (K4MQG-47), Dave Kennedy (N4SU-64), and Steve Reichlyn (AA4V-164).

Bob Burton (N4PQX) writes, "I've noted this award has started to catch on now since I was "demoted" a number of positions despite my total increase this year, likely from those like Gary Dixon who had never turned in their "band entities". Last year I was 397th with 1368 band entities, and this year I fell to 406th with 1457! Note that this year 30 meters will start counting for this award, so Gary will add another 300+ as well as what he gets on 160 meters this year. Since I'm not on 160m, rarely on 30m and not on 6m, I'll probably continue the downward slide a bit. Hoping to make it past 1500 this year and to stay in the top 500."

I guess the gauntlet has been thrown down. Are you up to "The Challenge"?

W4ZV Works Mongolia for 160m WAZ!

After nearly two years of making skeds and listening, Bill Tippet, W4ZV, made the following post on the Internet on or about February 3:

"Wow! I finally worked Chak, JT1CO, to complete my 160 WAZ. I posted a little analysis here for any interested:

<<http://users.vnet.net/btippet/JT1CO.htm>>

Thank you Chak for your perseverance and patience! Also special thanks to Ken, K4ZW, for all the assistance he has given Chak with both TX and RX antennas! Let's hope this breaks the ice for more East Coast QSO's."

(The cited web page has an analysis of the difficult path through the North Pole Auroral zone via which Bill had to work Mongolia. Bill is currently rated #2 in the world in Top Band DXing, but other CDXAers—N4SU, N4JJ, and AA4V—are close behind in the world standings and, now all have earned 160m WAZ. If you would like to see the rundown of 'Who's Who on the Top Band' by VK1AA, go to <http://www.qsl.net/160/>. —The Editor)

Reference: Grayline - Black Magic or What?

By Ron Bailey, AA4S

I enjoyed reading this piece in February's "Pileup" by John Scott. But he made the mistake of asking "What do you think?" Well, as a longtime fan of the grayline I felt compelled—to think, that is. Many years ago in a place far away (Parkesburg, PA) as WA3ATX and N3RB it was my morning ritual to turn my 204BA to 220 degrees and rag chew with VU2LE, VU2GW, 4S7DA, 4S7EC and others over the long path during grayline periods. This path was nearly always there and many a lifelong friend was made during those years (1968-1977).

For example, when my engineering assistant, Raman, who was from Madras in southern India went back home to be married, Bala (VU2LE) helped track his every movement. I believe he even wangled an invitation to the wedding! The reception by all accounts was attended by more than 1000 guests using elephants for their comings and goings. I know for a fact that the wedding gifts were of such magnitude that Bill Gates could not have afforded the import duty. Hence, Raman had to leave them in India when he returned to the United States with his bride!

But I digress. The point of my seemingly pointless story is that I had been told one time by an ancient sage that this "magic" path was at its best when signals first returned to earth from the ionosphere on salt water under darkness. Furthermore, if the signal's first return to earth fell on land, the path would be poor! Indeed, as I used this path over the years I began to notice that on mornings when I was hearing strong Latin American or Colombian signals, long path conditions would be poor. When these signals were absent, conditions were good to excellent! Is this story true or is it just a fignewton of this operator's imagination? What do you think?

(As I was a little slow on picking up the inference of Ron's message, I chatted with him about it at a recent luncheon. The "leap" that I missed in Ron's hypothesis was that if he was hearing South Americans, the long path hop(s) was impinging land rather than salt water and path loss was great. With all our years of DXing in the membership, there must be other hypotheses or anecdotal evidence that you can share. Now that two votes are in, what do you think? Write me at k8yc@adelphia.net. —The Editor)

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interests resist at being told what to do until threatened with official sanctions. In those commercial interests where hams serve the communications technology role, cooperation is amongst the best found. In instances where amateur enforcement may be needed, hams more often than not provide assistance with problems with malicious interference by providing sound technical evidence.

The second takeaway was that Riley (also a ham, as you know) stated, "We are our own worst enemy." He cited instances where verbal fisticuffs occurred on the air between hams that reflect poorly on the amateur radio community. His suggestion: rather than 'stand and fight', simply twist the dial and find another frequency. We currently are riding a wave of favorable public opinion following September 11. Many realize that amateurs offer a truly robust communications resource in the event of emergencies. We simply must not lose that trust by letting worldwide listeners of ham activities hear less than professional on-air behavior. Riley suggested all might ask themselves, "Would I be proud if my child or grandchild were listening in on my radio conversations?" A thought worth pondering.

Bob Heil, Heil Sound. Bob's topic was "The Science of Audio—Chapter II". He extended his comments of last year by providing actual demonstrations of the impact of having sound operating in phase and out of phase. He then showed the same reasoning explains that yagi antennas works essentially by having the directors as in-phase enhancers of RF energy while the reflector acts as an out of phase canceling element of RF energy. A thought provoking idea presented is that if one can get 5 or 10 db of power into a rig from a prop-

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Most Needed DXCC Entities

DX Magazine has completed its 2002 Survey of "Most Needed" DXCC entities. There has been a little shuffling at the top of the list with last year's operation from North Korea and some of the DXpeditions in 2002. If you'd like to see the results of the latest survey, go to DX Publishing's website at:

http://www.dxpub.com/dx_news.html

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erly designed microphone, it is far more cost effective than getting it from a power amplifier at the output. That very reasoning gave rise to Heil's success in sound engineering. Yet, he ascribes his "knowledge" to the well document works of Drs. Fletcher and Munson of Bell Telephone Labs which have been ignored by many.

Heil introduced new products. A noise canceling headset was shown. This will be good for DXpeditions or Multi-Multi contesting stations where many operators are working in close proximity and outside room noise is distracting. Also shown were items probably considered mundane by some. These were a newly designed microphone wire format which shields the audio signal while keeping the PTT control signals away from the audio carrying conductors. This wire combined with some newly combined connectors to accommodate the wiring should solve a lot of our problems.

Dave Anderson, Chatham Island DXpedition.

Dave presented some great pictures of the DXpedition on Chatham. Only several hundred people occupy the island, yet it is quite civilized with the accommodations for the operators being on the top of the list. The team operated from a second story flatlet at an idle horse race track, complete with windows on two sides, a small kitchen, and a wonderful view of the South Pacific Ocean. There was plenty of space to set up their monoband antenna farm so that mutual interference between antennas pointing at various DX centers of population were minimized. This DXpedition was quietly one of the top 10 DXpeditions in recent years with over 71,000 Q's captured. The locals were very accommodating as the ops often made their way back to sleeping quarters a mile away in "town" at all hours of the night. Dave's only lament was the dietary staple consisted mainly of lobster—harvested as one of the island's bigger commercial enterprises—and hamburgers. *(I'll bet a salad tasted wonderful on his return stateside—The Editor)*

Dave offered a suggestion that anyone going on a DXpedition should carefully attend to his 70 pound weight limit, since international air travel many times simply will not accommodate overweight baggage situations. He finds "pelican cases" offer a damage-proof, water-tight container of great utility. Ah, one final thing, QSLs were shipped via bulk container from New Zealand in early March, so your QSL from ZL7C should be arriv-

Don Daso, K4ZA, Homeland Security. Don provided an informative rundown on some of the issues of Homeland Security being discussed in Washington, DC. Don has been engaged in Washington since early last year with CDC examining homeland security strategies and issues. His presentation set a framework to differentiate various actions that can be taken before, during, and after terrorists "events".

Doug Smith, Ten-Tec Orion Transceiver. Doug provided a very informative rundown of the development effort at Ten-Tec on the new Orion transceiver. I wish I could report the Orion was available today, but cannot. Much beta testing is being done on this "new generation" radio which includes both crystal and DSP filtering. Two independent receivers, control on transmitter audio performance, and significant internal digital control of radio function promise that this radio will be something special. Look for it to be shipping before summer is over.

Wayne Mills, N7NG, ARRL Membership. Wayne spoke mostly about "Logbook of the World". This system being developed by ARRL will provide a secure means for obtaining award credits. Through cooperation with other organizations, award credits for WAZ, IOTA and other awards, other than ARRL are foreseen. Basically, the system will use a security key provided by ARRL to "hash" everyone's submitted data to ensure 1) that the person submitting data is who they say they are, and 2) that no changes can be made to data after submission without causing the QSO specific "hash total" to fail. Each submitter of QSO data will do so to the ARRL server. The server will compare submitted records to all on file for a match, marking those which match with the appropriate award credit. Only if you "redeem" award credits will there be a charge, but that charge will be "very competitive" with the cost one incurs in sending out QSLs and++ return postage with less than 100% probability of return. Software modules will be made available to any developer who writes logging software, and a submission module will be available for individual submissions. Alpha testing is complete. An extended beta testing program will begin to "stress test" the software by any/all ARRL members. Log data entered during beta testing will be deleted at the conclusion of testing, however. The beta testing will begin within the next month or so. We may have the "Logbook" before year's end!

Charlotte Hamfest Pictorial



Bill and Josh Fisher man the CDXA booth with Bill's friend on the right. The Gemstone Globe raffled off was a big success. Countries of the globe were made of inlaid minerals of different colors. It was a handsome piece for anyone but especially DXers who "really know their geography". Gary Colborne, N1GC was the winner. The CDXA website was loaded to a PC so booth visitors could navigate the site offline. Several new members signed up at the hamfest.



Ted and Itice Goldthorpe share a jovial moment with Bob Heil of Heil Sound. Bob returned to Charlotte for the second consecutive year to address the hamfest forums. The "Heil Cartridge" (HC) was introduced at the Charlotte Hamfest 21 years ago and has gone on to be recognized as the best microphone available to hams.



The Cannaday's, Mac Murray (K4VNY), Josh and Bill Fisher get to know each other as dinner begins. During introductions, Mac announced he'd been a member of CDXA for five years but had never made it over from Topsail Beach, NC to attend a hamfest or luncheon meeting. All were happy to meet Mac at long last and hope we see him again soon. Josh was sitting in the "magic chair" and was the winner of a Heil Pro-Plus headset while attending his first-ever Hamfest dinner!



The family of the late William Taylor, W4WBT, asked that CDXA make the remaining two years of Bill's QST subscription available to a person of our choice. The recipient of Ted's clever selection process was David Bower, K4PZT. David was one of our visiting contingent from Knoxville, TN. Over 65 people attended the dinner

Another Homebrewed Antenna

By John Scott, K8YC

Back in the February 2002 issue of *The Pileup* I discussed a homebrewed “X-Beam” antenna. The performance of that antenna was good but not outstanding. I had never modeled that antenna since the antenna was built using dimensions disclosed in an article (ARRL Antenna Compendium, Vol. 1, ©1985), and the NEC modeling engine is not supposed to do well in modeling elements with acute angles. Therefore, when I had a great signal report from off the “back” of the beam, I decided to produce a model of the antenna that I built. To my surprise, the direction of maximum gain was indeed in the reverse direction of that expected!

When building the X-Beam, I ran across an article by L.B. Cebik at URL: www.cebik.com that discussed what he called “close end-coupled antennas”. In that family were included the X-Beam, the Hex Beam, the VK2ABQ Square and the Moxon Rectangle. All produce antennas with small turning radii. From the article, the Moxon Rectangle had characteristics that made it something I wanted to build. When N4PQX, drew my attention to the new Optibeam offered by a German company that included a Moxon Rectangle as one of its elements, I was determined to proceed.

I modeled the antenna using EZNEC antenna modeling software. Using some ideas from Cebik, I scaled it for 15 meters and was quite pleased with my first model. Subsequent

“tweaks” to the first model yielded less attractive solutions. The elevation and azimuthal plots of the first model are shown in Figures 1 and 2, respectively. These plots are created assuming an elevation of 26 feet off the ground because my “tower” consists of several pieces of telescoping PVC pipe designed and created by Rodney Harper, W4SI, for a long-ago Field Day.

The configuration of a Moxon Rectangle is akin to a two element yagi—driven element and reflector—except that the last few feet of the elements are bent towards each other. A schematic of the shape is shown on the next page as Figure 3. Fortunately, the materials I had

used for the X-Beam were readily adaptable to building the Moxon rectangle, but there were some design issues on how to construct and support a large rectangular structure. I wanted to use wooden structural elements to keep the cost low. And, unlike the X-Beam which had a line strung around its outer perimeter to support the wire tails used for the elements, the Moxon rectangle did not offer as convenient means to ensure the solid tips were affixed in an orientation just six inches, tip to tip.

The tip spacing was solved with a 5/8 inch O.D. piece of PVC piping secured to each tail with a hose clamp. The boom and mast was fabricated from a

2” x 2” x 8’ piece of pressure treated wood. Pressure

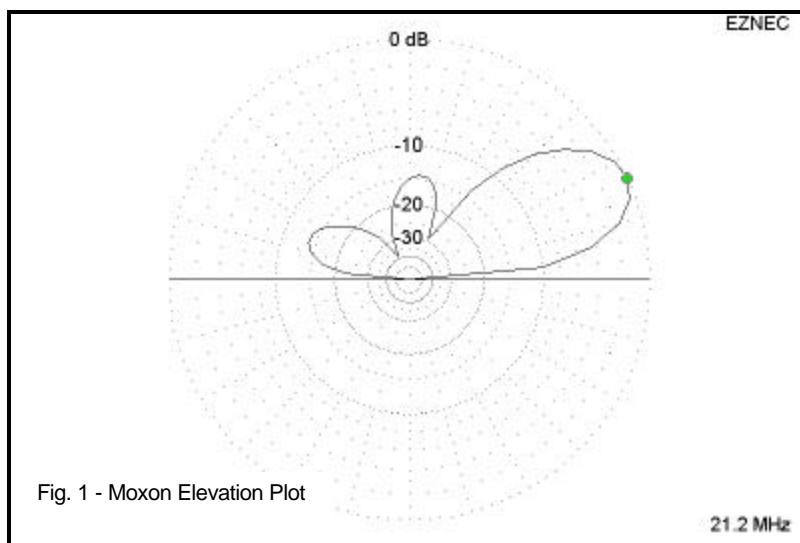


Fig. 1 - Moxon Elevation Plot

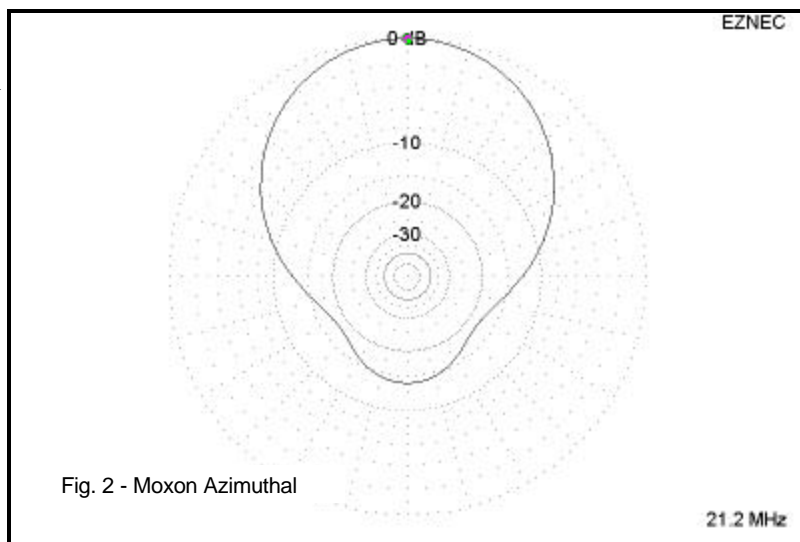


Fig. 2 - Moxon Azimuthal

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treated plywood, 1/2 inch thick, formed two “cheeks” to make a rigid structure to join mast and boom at right angles. Two more pieces of pressure treated plywood (5” x 24”) affixed to the boom ends with U-bolts served as a

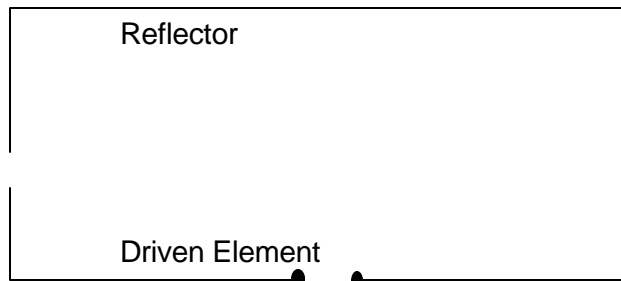


Figure 3 - Configuration of Moxon Rectangle

platform to hold the elements using common hardware insulated by use of some clear vinyl tubing. Construction took about 5 hours, start to finish. Total cost to construct was about \$160 with the greatest cost being the tubing which was purchased new rather than being scavaged.

I’ve been pleased with the performance compared to my Cushcraft R-7000 vertical (no surprises there!!!). For someone as “antenna challenged” as this author, it is downright exciting to have a “gain” antenna. Shortly after the ARRL International CW contest, I created a mini-pileup from Europe on SSB—a first for me! In the International DX - Phone contest on March 1-2, I could not even hear T31MY (Central Kiribati) on my vertical. I turned my Moxon toward T31 using the “Armstrong

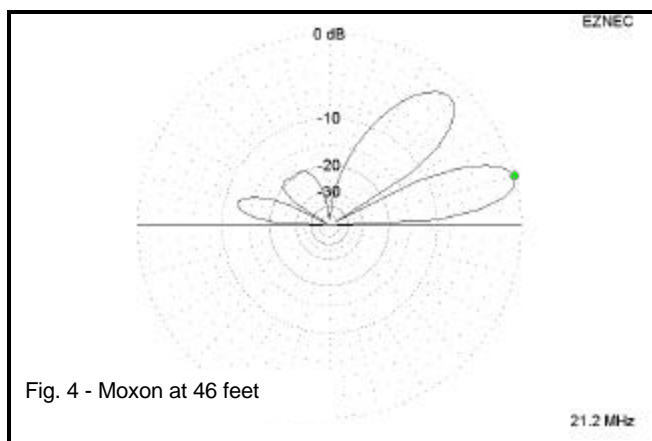


Fig. 4 - Moxon at 46 feet

Method” (remember, I’m tower challenged, too!) and worked them on first call. As modeled at 26 feet elevation, the antenna is supposed to give 12.27 dbi gain with

maximum gain at a 25 degree takeoff angle. Three db down points are at 12.7 and 40.2 degree takeoff angles. Raising the antenna to a full wavelength above ground gives a modeled elevation pattern as shown below in Figure 4 with a gain of 12.28 dbi at a 15 degree takeoff angle for the primary lower lobe .

The finished antenna mounted on my “tower” is shown in Figure 5, below. This is a definite improvement over the earlier X-Beam. I’m finding a lot of the fun in chasing DX is not just in working ‘em, but in the satisfaction that comes from snagging a “new one” with something built from commonly available materials.

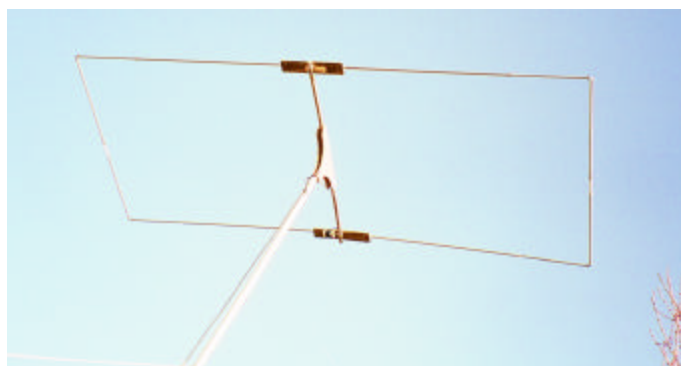


Figure 5 - Homebrewed Moxon Rectangle atop 26 foot high “plumbers wondertower”. Turning radius for this 15m configuration is about 8.8 feet. Plastic tubing between “tails” locks in 6” tip spacing.

Roger Webb, W4MW, Sprints to Victory

A newsy piece of information arrived in my email inbox late on the evening following the CDXA dinner at the hamfest. That news reported that Roger Webb, W4MW had placed first in the 2002 Fall Sprints for 50 MHz. Congratulations to Roger. Now we’ll just have to get that 6 meter beam, that we saw so terribly bent up by ice in the January Pileup, straightened back up. Congratulations to you, Roger!

Down But Not Out!

I had an email exchange with Bob Southworth, KI4YV, indicating that while he was supposed to stay away from RF because of his heart implant—staying away did not mean ceasing all ham radio activity. Seems as if Bob is working on a way to control his radio remotely. Aren’t hams creative!!!

The Back Page

Last Chance! We've been announcing since November that dues are payable. So, if you don't see The Pileup show up in your e-mail or snailmail box in April, your dues have probably not been paid. All the information you need to know about dues and where to send them appears *each month* in the little box in the lower left hand corner of page 2 of The Pileup. Hope to see you next month!

Selected **Contests** coming up:

Date	Contest	Comments
March 15-17	BARTG RTTY	See Page 99, March 2003 QST
March 15-17	Russian DX Contest	See Page 99, March 2003 QST
March 22-23	Oklahoma QSO Party	See Page 99, March 2003 QST
March 29-30	CQWW WPX SSB	See CQ website or Page 99, March 2003 QST
April 5-6	SP (Poland?) DX Contest	CQ Magazine Page 98 (no details)
April 11-13	Japan Int'l CW DX	CQ Magazine Page 98 (no details)
April 19-20	Michigan QSO Party	Go hunting for Bill Parris, AA4R, in Frankfort, MI

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First Class Mail

See something wrong with your address label? Notify K4SQR at once, please.